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2022.11.29 Project Skunkworks: Open Polymerase™ and Power Cloning™ and SeaVent+TdT DNA Synthesis™

By Fernando Andrade, M.S. CEO. Director of Skunkworks Division.

Lambda Red Assemblyase™
λRed Assemblyase™
Open λRed™
Open Lambda Red™
Open TA Cloning™
T7+ RNA™, *Pwo* Fusion™
***Psp* Vent™**
Tth+Start™
***Pfu* UTPase™**
***Psp*+ Polymerase™**
***Psp(-exo)*+ Polymerase™**
Tth+ Polymerase™
PwoS+ Polymerase™
TthStart™
StartTth™
Start+Tth™
Start-Tth™
Tli Vent™ Polymerase™
Tli(-exo) Vent™ Polymerase™
Tli+ Polymerase™
Tli(-exo)+ Polymerase™
Tth-Start™
TthPlusStart™
TthPlus™
StartPlusTth™
TthPlusStart™
***Pwo* Sso7d™**
T5 Cloning™
Blue Gate Cloning™
T5-Sap OnePot Cloning™
T5-Sap OnePot Assembly™
SeaVent DNA Synthesis™
SeaVent+TdT DNA Synthesis™
Sparrow DNA Synthesis™
SeaVent *de novo* Step-wise DNA Synthesis™
ZaTdT DNA Synthase™
SeaVent+ZaTdT DNA Synthesis

Sea Vent Polymerase™ is a native, N or C terminal tagged (purification and immunodetection) enzyme-coded *NrS-1 gene protein 28 of* phage NrS-1. The protein name for this gene is termed a "primase". Alternate names for this polymerase are Nrs-1 Vent Primase™, Phage Vent Primase™ and Sea Vent Primase™. The Radegen Biotechnology genetic constructs for this enzyme are designed for heterologous production in *E. coli* and *P. putida.* The utility of this enzyme for PCR is none. This enzyme is in development and will be marketed for Radegen Biotechnology's step-wise *de novo* DNA synthesis platform.

>BAN05337.1 primase [Nitratiruptor phage NrS-1]
MIMEIPAIKALSRYAQWVIWKKERDTKIPYNPNNGKKASSTDPLAWGDIDEAQAGLVRYGANGLGFVLTK
SDPFVFIDLDHVLDENKRVKCEWARQLLKEIKSYTEISPSGDGLHVVVSGKLPDYIKHKTKFDDGSALEV
YESGRYMTITGEVFDGRDDIKELDLSILGEFAEHKIETKNAPVQIESATTLDDEAIIDLMKRKGQWPDAP
KDGDDWSSLDMSFANRLAFWCGKDIERMDRIFRQSPLMRQKWDRPTAGSTYGRITLKKACDFVDSVYDPA
LRNESDCPFEPYNEEGGPRNDKEEKDPLWLYKVLLTKGIEVWFDIKLEKYGIKRNNRVDYIAKSSLQQIV
FEIIGKTPKNIAVPTYIGAYEPSKPEKWEEEGIKYINLFKPTPLMKVKPVKEMPEIVKNLLLNLFDYDAK
SMGLFINWLAFIYQYKERTGVAWIFMGKQGTGKGLLVDLLKKIFEEHMSSNITDANLDSQFNPYLYNKLI
VHLNEVSADNRKSRMLVKNRLKTWITDETLYINRKNMKEVEIKNFCNFIINSNETIPVDIEDSDRRFNVI
ECNNVLKEQEWWTTESYQEILNNAEGFAKYLAGIKVDRSKVNEVVMSEKKKAIVETTESVLKQIAKALTD
RDIEWFLDNGLEGVVEKNIVNDFQWEELQEAITTGVIPNKYLMIIVEQILGDSKTITWIKRNIITPYQVG
ETTVVKMAGKPIRAIVVG

2017. Deep-sea vent phage DNA polymerase specifically initiates DNA synthesis in the absence of primers. Mar 21;114(12):E2310-E2318. PMID: 28265063